

CLAIMS:

1. A method of recording information on a multilayer record carrier (1) by irradiating the record carrier by a radiation beam having a recording power, said multilayer record carrier comprising at least two substantially parallel information layers (6, 8), said method comprising the steps of:

- 5 a) a detecting a difference in a transmission property of at least one (6) of said at least two information layers (6, 8);
- b) determining, on the basis of said detected difference in a transmission property, a corrected value for a recording power used for recording said information, and
- c) using said corrected value for recording said information on another one (8) of
10 said at least two information layers (6, 8) when said recording is effected through said at least one (6) of said at least two information layers (6, 8) at a position where said difference in a transmission property has been detected.

2. A method as claimed in claim 1, wherein said record carrier (1) is a writable
15 optical disk and said at least one information layer (6) is a semi-transparent layer.

3. A method as claimed in claim 1 or 2, wherein said difference in the transmission property is obtained by determining a portion of said at least one recording layer (6) which contains recorded data.
20

4. A method as claimed in any one of the preceding claims, in which said corrected value is determined by measuring the reflection level difference in said other information layer (8) when said recording is effected through a recorded area or through a non-recorded area of said at least one information layer (6).
25

5. A method as claimed in any one of the preceding claims, also comprising the step of using a power correction procedure provided in a recording apparatus for correcting said recording power according to said corrected value.

6. A method as claimed in claim 5, in which said corrected value is used as a pre-set value for said power correction procedure at said position where said difference has been detected.

- 5 7. A method as claimed in claim 1 or 2, also comprising the steps of:
- i) determining a first angular offset between header areas on said at least one (6) information layer and header areas on said other information layer (8) by measuring differences in the reflection level in said other information layer (8) caused by said header areas in said at least one information layer (6) at a predetermined first measuring point;
 - 10 j) deriving positions of header areas from said first angular offset determined; and
 - k) using said corrected value at said derived header positions.

8. A method as claimed in claim 7, also comprising the step of determining a
15 second angular offset between header areas on said at least one (6) information layer and header areas on said other information layer (8) by measuring differences in the reflection level in said other information layer (8) caused by said header areas in said at least one information layer (6) at a second predetermined measuring point located at a radius of said record carrier (1) different from that of the first predetermined measuring point, the header
20 areas being derived from both the first angular offset and the second angular offset so as to account for a possible decentering of said at least two information layers (6, 8).

9. A method as claimed in claim 7 or 8, in which said corrected value is determined on the basis of said measured reflection level differences.

- 25 10. A method as claimed in claims 1, 2, 7 or 8, in which said corrected value is determined by performing a trial recording during which test patterns are recorded on the record carrier.

- 30 11. A method as claimed in claim 1, also comprising the step of reading a corresponding specification provided on said record carrier (1) from said record carrier, and in which said corrected value is determined from the corresponding specification read.

12. A method as claimed in claim 1, in which said difference in said transmission property is obtained on the basis of a transmission map indicating recorded portions of said at least one information layer (6).

13. A method as claimed in claim 12, in which said difference in said transmission property is obtained on the basis of said transmission map combined with positions of header areas (H) or gap portions.

14. A method as claimed in claim 12 or 13, wherein said transmission map is corrected on the basis of a determined displacement between said at least two information layers (6, 8).

15. A method as claimed in any one of claims 12 to 14, wherein said transmission map is derived from a table of contents comprising information about the position of information recorded on said at least one information layer (6).

16. A method as claimed in any one of claims 12 to 14, comprising the step of pre-scanning the record carrier, said transmission map being derived from the pre-scanning operation.

17. A method as claimed in claim 16, wherein said pre-scanning operation is a quick scan operation in which only every N tracks of said at least one recording layer (6) are scanned so as to determine the transmission states of the at least one information layer (6).

18. A recording apparatus for recording information on a multilayer record carrier (1) provided with at least two substantially parallel information layers (6, 8), said apparatus comprising:

a recording unit (10) for recording said information with a predetermined recording power, and

determining means (17) for determining a difference in a transmission property of at least one (8) of said at least two information layers (6, 8),

wherein said recording unit (10) is controlled to perform said recording with a corrected value of the recording power when said recording is effected on another one (8) of

said at least two information layers (6, 8) through said at least one information layer (6) at a position where said difference has been detected.

19. An apparatus as claimed in claim 18, wherein said determining means is an optical detection system (17) for detecting light reflected at said at least one information layer (6).

20. An apparatus as claimed in any one of claims 18 to 19, wherein said control of the recording unit to perform said recording with a corrected value of the recording power is carried out by a power calibration function of said recording apparatus.

21. An apparatus as claimed in any one of claims 18 to 20, wherein said determining means is arranged to obtain a transmission map indicating recorded portions of said at least one information layer (6) on the basis of a pre-scanning operation.

22. An apparatus as claimed in any one of claims 18 to 20, wherein said determining means is arranged to obtain a transmission map indicating recorded portions of said at least one information layer (6) on the basis of a table of contents comprising information about the position of information recorded on said at least one information layer (6).

23. An apparatus as claimed in any one of claims 18 to 22, wherein said recording apparatus is an optical disk recording device.

24. A multilayer record carrier (1) provided with at least two substantially parallel information layers (6, 8) and suitable to be recorded by a single recording unit (10), wherein a specification is provided on said record carrier (1), said specification indicating a power correction factor to be used when recording is effected on one (8) of said at least two information layers (6, 8) through another one (6) of said at least two information layers (6, 8).

25. A multilayer record carrier as claimed in claim 24, said multilayer record carrier being a rewritable optical disk (1).